

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Attorney Docket No.: P6252US

Huang et al.

Confirmation No.: 4379

Application No.: 10/715,734

Examiner: Wong, Leslie A.

Filed: November 17, 2003

Group Art Unit: 1761

For: CHEESE COMPOSITIONS AND RELATED METHODS

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APPEAL BRIEF UNDER 37 CFR § 41.37

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The presently revised Appeal Brief is submitted in response to the Notification of Non-Compliant Appeal Brief mailed July 31, 2009.

As originally submitted, the Appeal Brief was presented in support of the Notice of Appeal to the Board of Patent Appeals and Interferences, filed on February 18, 2008, from the Final Rejection of claims 1-23 of the above-identified application, as set forth in the Final Office Action mailed on November 13, 2007 and confirmed in the Advisory Action mailed January 22, 2008.

The Commissioner of Patents and Trademarks is hereby authorized to charge any fees in this application to Deposit Account Number 07-0900 which represents the requisite fee set forth in 37 CFR § 41.20(b)(2). The Commissioner of Patents and Trademarks is hereby authorized to charge any additional fees due to Deposit Account No. 07-0900. The Appellants respectfully request consideration and reversal of the Examiner's rejections of pending claims.

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**I        REAL PARTY IN INTEREST**

The real party in interest of the above-captioned patent application is the assignee,  
General Mills Marketing, Inc. of Minneapolis, MN.

**II      RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences known to Appellant that will have a bearing on the Board's decision in the present appeal.

### **III STATUS OF CLAIMS**

The present application was filed on November 17, 2003 with claims 1-23. A non-final Office Action was mailed February 21, 2006. A response was filed May 22, 2006. A Final Office Action was mailed August 4, 2006. An Amendment After Final was filed October 4, 2006, in which claims 1, 17 and 21 were amended. An Advisory Action was mailed October 16, 2006 refusing to enter the October 4, 2006 amendment. A Request for Continued Examination was filed November 2, 2006 requesting entry of the October 4, 2006 amendment. An Office Action was mailed January 3, 2007. A response was mailed May 30, 2007. A Final Office Action was mailed August 21, 2007. A Request for Continued Examination including a response was mailed October 30, 2007. A Final Office Action was mailed November 13, 2007. An Amendment After Final was mailed January 14, 2008. An Advisory Action was mailed January 22, 2008 indicating that the January 14, 2008 response was entered and that the rejections to claims 1-23 had been maintained. Claims 1-23 stand twice rejected, remain pending, and are the subject of the present Appeal.

**IV STATUS OF AMENDMENTS**

No amendments have been made subsequent to the Final Office Action mailed November 13, 2007.

## **V SUMMARY OF CLAIMED SUBJECT MATTER**

Aspects of the present inventive subject matter include, but are not limited to, cheese compositions, food products including cheese compositions, methods of formulating cheese compositions methods of making cheese compositions. Specific claims and their corresponding support from the specification is contained in the following pages.

This summary does not provide an exhaustive or exclusive view of the present subject matter, and Appellant refers to the appended claims and its legal equivalents for a complete statement of the invention.

Independent claim 1 is directed to:

1. A cheese composition comprising:

fat;

protein comprising:

casein protein; and

a casein-replacing amount of non-casein protein;

starch consisting essentially of a casein-replacing amount of non-pregelatinized, modified starch;

emulsifying salt; and

water.

Support for the elements of independent claim 1 are found as follows:

Claim 1 Element	Support
Fat	Page 5, Line 24 –Page 6, Line 10; Page 16, Lines 17-23; Page 19, Table 1; Page 20, Table 2
protein comprising: casein protein; and a casein-replacing amount of non-casein protein;	Page 3, Lines 2-11; Page 5, Lines 1-12; Page 5, Lines 24-26; Page 6, Line 11 – Page 8, Line 6; Page 15, Line 9 – Page 16, Line 23; Page 19, Table 1; Page 20, Table 2
starch consisting essentially of a casein-replacing amount of non-pregelatinized, modified starch;	Page 3, Lines 2-20; Page 5; Lines 24-26; Page 7, Lines 14 – 23; Page 8, Line 7 – Page 10, Line 6; Page 11, Lines 13-28; Page 13, Lines 7 – 30; Page 15, Line 9 – Page 16, Line 23; Page 19, Table 1; Page 20, Table 2
emulsifying salt	Page 14, Lines 1-20; Page 17, Lines 22-23
Water	Page 14, Lines 21-23; Page 16, Lines 17-23; Page 17, Lines 14-15



Independent claim 17 is directed to:

17. A method of formulating a cheese composition comprising the step of reducing an amount of a casein protein in a formulation comprising:

the step of incorporating a non-casein protein into the formulation for the composition based upon information comprising functional characteristics of the non-casein protein; and

the step of incorporating a starch consisting essentially of a non-pregelatinized, modified starch into the formulation for the composition based upon information comprising data indicative of a viscosity characteristic of the non-pregelatinized, modified starch.

Support for the elements of independent claim 17 are found as follows:

Claim 17 Element	Support
the step of incorporating a non-casein protein into the formulation for the composition based upon information comprising functional characteristics of the non-casein protein	Page 7, Line 14 –Page 9, Line 4; Page 15, Line 29 – Page 16, Line 7; Page 16, Lines 13-16;
the step of incorporating a starch consisting essentially of a non-pregelatinized, modified starch into the formulation for the composition based upon information comprising data indicative of a viscosity characteristic of the non-pregelatinized, modified starch;	Page 9, Line 5 - Page 10, Line 6; Page 15, Lines 13-21; Page 15, Line 29 – Page 16, Line 7;

Independent claim 21 is directed to:

21. A method of making a cheese composition comprising the steps of:

formulating a cheese composition ingredients comprising:

fat;

protein comprising:

casein protein; and

a casein-replacing amount of non-casein protein;

starch consisting essentially of a casein-replacing amount

of non-pregelatinized, modified starch;

emulsifying salt; and

water;

combining the ingredients;

mixing the ingredients to form a mixture; and

heating and cooling the mixture to provide a cheese composition.

Support for the elements of independent claim 21 are found as follows:

Claim 21 Element	Support
formulating a cheese composition ingredients comprising: fat; protein comprising: casein protein; and a casein-replacing amount of non-casein protein; starch consisting essentially of a casein-replacing amount of non-pregelatinized, modified starch; emulsifying salt; and water;	Page 5, Line 24 –Page 6, Line 10; Page 16, Lines 17-23; Page 19, Table 1; Page 20, Table 2
combining the ingredients;	Page 20, Line 4 – Page 21, Line 14
mixing the ingredients to form a mixture	Page 20, Line 4 – Page 21, Line 14
heating and cooling the mixture to provide a cheese composition	Page 20, Line 4 – Page 21, Line 14

**VI      GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,937,091 to Zallie et al. in view of Magnuson (Cereal Foods World).

## VII ARGUMENT

A. The Applicable Law under 35 U.S.C. § 103(a)

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. 35 U.S.C. §103(a)

B. Discussion of the rejection of claims 1-23 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,937,091 to Zallie et al. in view of Magnuson (Cereal Foods World)

Claims 1-23 were rejected as being unpatentable over the combination of Zallie et al. in view of Magnuson. Applicant respectfully traverses said rejection.

In the Final Office Action mailed August 21, 2007, claims 1-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,937,091 to Zallie et al. in view of Magnuson (Cereal Food World). Applicant respectfully asserts that Zallie et al. and Magnuson, considered individually or in combination, fail to teach, suggest or provide a rational basis for cheese compositions and associated methods of formulation that use a starch consisting essentially of a non-pregelatinized, modified starch as contained within pending independent claims 1, 17 and 21.

In the Amendment After Final mailed October 4, 2006, and its associated Request for Continued Examination mailed November 2, 2006, independent claims 1, 17 and 21 were each amended to include the transitional phrase “consisting essentially of” with respect to the starch

constituent. Specifically, the starch component was claimed as “...starch consisting essentially of a casein-replacing amount of non-pregelatinized, modified starch;...”(Claims 1 and 21) or “...starch consisting essentially of a non-pregelatinized modified starch...” (Claim 17). The transitional phrase “consisting essentially of” is recognized as occupying a middle ground between closed claims and fully open claims and are generally construed as equivalent to comprising unless there is a clear indication in the specification of what the basic and novel characteristics are. MPEP 2111.03. Within the present specification, precisely this type of clear indication of basic and novel characteristics is described with respect to the starch component.

As described throughout the specification and as discussed throughout prosecution, the present invention includes the use of non-pregelatinized, modified starch in cheese compositions and methods of formulation. Page 9, Lines 12-15. The specification includes explicit disclosure recognizing that non-pregelatinized, modified starches provide distinct processing advantages over pregelatinized modified starches resulting in the production of a satisfactory cheese composition. Specifically, it is stated that, ““Pregelatinized starch tends to develop a higher viscosity too quickly for this application.” and that, “Applicants have discovered that that a *non-pregelatinized*, modified starch that is resistant to such breakdown tends to provide suitable viscosity characteristics during processing.” Page 9, Line 18 – Page 10, Line 2. In addition, Applicants noted that it is believed that thermally and chemically modified starch granules exhibited advantageous resistance to breakdown processing with the commonality being that the starch granules being non-pregelatinized. Page 11, Lines 13-28.

At the time of filing, the inventors expressly demonstrated recognition of the advantages afforded through the use of “non-pregelatinized, modified starches” and noted specific

processing deficiencies related to the use of “pregelatinized, modified starches”. It should also be noted that not only does the specification recognized processing differences but also, at no place within the specification is there any suggestion that pregelatinized starch can be successfully utilized as a component of the presently claimed invention in any amount. The recognition by the Applicants of the differences between non-pregelatinized and pregelatinized starches provides evidence and a clear indication that they are not equivalent for purposes of the presently claimed invention, and that the transitional phrase “consisting essentially of” as found in claims 1, 17 and 21 should be considered closed with respect to pregelatinized modified starches. As such, pregelatinized modified starches are not equivalent to the claimed non-pregelatinized modified starches of the presently claimed invention.

Upon recognizing the closed nature of claims 1, 17 and 21 with respect to the starch component, it becomes clear that Zallie et al. fails to teach, suggest, or provide a rational basis to one of ordinary skill in the art to utilize non-pregelatinized, modified starch within a cheese composition as presently claimed. Within multiple places in the specification, Zallie et al. expressly teaches away from the starch component of the presently claimed invention by disclosing the use of starch or starch blends comprising at least 20% pregelatinized debranched starch and in some cases, up to 100% pregelatinized starch. See ABSTRACT; col. 3, lines 8-9; col. 4, lines 16-22; col. 5, lines 39-55; col. 7, lines 62-64. Contrary to recognizing the advantageous properties of non-pregelatinized, modified starch as taught and claimed in the present application, Zallie et al. expressly teaches away from the pending claims by expressly teaching the use of at least 20% pregelatinized, debranched starch.

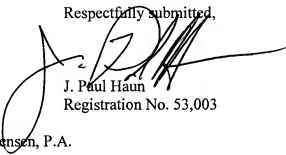
Throughout prosecution, the Examiner has repeatedly indicated that the, "...the specific type of starch ... are seen to be no more than a matter of choice and well-within the skill of the art." While the Applicants have requested an indication that official notice has been taken with respect to this assertion, to date official notice has not been taken nor has evidence been provided supporting said assertion. Lacking such evidence, the only documentary evidence relative to the use and suitability of starch types for cheese compositions is the present application and Zallie et al. As discussed above, the present application makes it clear that proper starch selection (non-pregelatinized versus pregelatinized) does in fact matter with respect to the presently claimed invention. Zallie et al. expressly teaches the use of at least 20% of a pregelatinized starch that the applicants have explicitly noted processing deficiencies with. Based on the only evidence presented, there has yet to be any support for the assertion that the processing advantages of non-pregelatinized, modified starches in cheese compositions and methods of formulation as presently claimed are so notorious as to be known to one of skill in art.

The second cited reference to Magnuson is cited merely for its disclosure of the use of wheat gluten in the preparation of cheese and contains no disclosure relative to the use of non-pregelatinized modified starch as presently claimed. For this reason, Magnuson fails to address or cure Zallie et al.'s teaching relative to the use of at least 20% pregelatinized, debranched starch.

**Conclusion**

For the reasons argued above, Applicant asserts that claims 1-23 were improperly rejected under 35 U.S.C. §103(a). As such, reversal of the rejections and allowance of the pending claims is respectfully requested.

Respectfully submitted,



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**VIII APPENDIX – CLAIMS ON APPEAL**

1. (Previously Presented) A cheese composition comprising:  
fat;  
protein comprising:  
casein protein; and  
a casein-replacing amount of non-casein protein;  
starch consisting essentially of a casein-replacing amount of non-pregelatinized, modified starch;  
emulsifying salt; and  
water.
2. (Original) The cheese composition of claim 1, wherein the casein protein is present in an amount in the range from 10-20% by weight of the cheese composition.
3. (Original) The cheese composition of claim 1, wherein the non-pregelatinized, modified starch comprises non-pregelatinized, thermally-inhibited starch.
4. (Original) The cheese composition of claim 3, wherein the non-pregelatinized, thermally-inhibited starch is present in an amount in the range from 1-6% by weight of the cheese composition.
5. (Original) The cheese composition of claim 3, wherein the non-pregelatinized, thermally-inhibited starch comprises non-pregelatinized, thermally-inhibited, potato starch.

6. (Original) The cheese composition of claim 1, wherein the non-casein protein comprises non-dairy protein.
7. (Original) The cheese composition of claim 6, wherein the non-dairy protein comprises vital wheat gluten protein.
8. (Original) The cheese composition of claim 1, wherein the non-casein protein is present in an amount in the range from 1-4% by weight of the cheese composition.
9. (Original) The cheese composition of claim 1, wherein the non-pregelatinized, modified starch comprises non-pregelatinized, chemically modified starch.
10. (Original) The cheese composition of claim 9, wherein the non-pregelatinized, chemically modified starch is present in an amount in the range from 1-6% by weight of the cheese composition.
11. (Original) The cheese composition of claim 9, wherein the non-pregelatinized, chemically modified starch comprises non-pregelatinized, chemically modified, potato starch.
12. (Original) The cheese composition of claim 1, wherein the non-pregelatinized, modified starch has a viscosity value, according to the Starch Viscosity Test using 5% dry starch solids, in the range from 100-1200 Brabender units at the beginning of a 95° C. hold period and in the range from 200-1400 Brabender units after 15 minutes from the beginning of the hold period.
13. (Original) The cheese composition of claim 1, wherein the casein protein comprises rennet casein protein.

14. (Original) The cheese composition of claim 1, wherein the cheese composition is a substitute cheese composition.

15. (Original) The cheese composition of claim 1, wherein the cheese composition is an imitation cheese composition.

16. (Original) A food product comprising the cheese composition of claim 1.

17. (Previously Presented) A method of formulating a cheese composition comprising the step of reducing an amount of a casein protein in a formulation comprising:

the step of incorporating a non-casein protein into the formulation for the composition based upon information comprising functional characteristics of the non-casein protein; and

the step of incorporating a starch consisting essentially of a non-pregelatinized, modified starch into the formulation for the composition based upon information comprising data indicative of a viscosity characteristic of the non-pregelatinized, modified starch.

18. (Original) The method of claim 17, wherein the non-casein protein comprises vital wheat gluten protein.

19. (Original) The method of claim 17, wherein the casein protein is formulated in an amount in a range from 10-20% by weight of the total cheese composition, the non-casein protein is formulated in an amount in a range from 1-4% by weight of the total cheese composition, and the non-pregelatinized, modified starch is formulated in an amount in a range from 1-6% by weight of the total cheese composition.

20. (Original) The method of claim 17, wherein the step of incorporating a non-casein protein into the formulation for the composition is further based upon information comprising nutritional characteristics of the non-casein protein.

21. (Previously Presented) A method of making a cheese composition comprising the steps of:

formulating a cheese composition ingredients comprising:

fat;

protein comprising:

casein protein; and

a casein-replacing amount of non-casein protein;

starch consisting essentially of a casein-replacing amount of non-pregelatinized, modified starch;

emulsifying salt; and

water;

combining the ingredients;

mixing the ingredients to form a mixture; and

heating and cooling the mixture to provide a cheese composition.

22. (Original) The method of claim 21, wherein the non-pregelatinized, modified starch comprises non-pregelatinized, thermally-inhibited, potato starch.

23. (Original) The method of claim 21, wherein the non-casein protein comprises vital wheat gluten.

**IX EVIDENCE APPENDIX**

There is no evidence to be included in Appendix IX.

**X      APPENDIX – RELATED PROCEEDINGS**

There are no related appeals or interferences.